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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,395	03/28/2001	Takashi Kaku	FUJZ 18.525	7108
26304	7590	02/03/2005	EXAMINER	
KATTEN MUCHIN ZAVIS ROSENMAN			AHN, SAM K	
575 MADISON AVENUE			ART UNIT	
NEW YORK, NY 10022-2585			PAPER NUMBER	
			2637	

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/819,395

Applicant(s)

KAKU ET AL.

Examiner

Sam K. Ahn

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-- Th MAILING DATE of this communication app ars on th cov r sheet with the corr spondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment, received on 10/18/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-12 and 14-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6, 12, 14-18 and 24 is/are rejected.
- 7) ☒ Claim(s) 7-11, 19-23 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 10/18/04 have been fully considered but they are not persuasive. In regards to claims 2 and 14, applicants argue that Rudolph does not teach all the subject matter claimed by explaining that Rudolph's teaching is different from the claimed subject matter. The examiner respectfully disagrees.

First of all, the applicants argue that Rudolph's teaching of a test sequence is transmitted in a periodic alternating fashion between data and the test sequence wherein the test sequence is averaged at the receiver end. And therefore, time interval is required wherein the applicants' disclosure does not. However, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., instantaneous point requiring no time interval) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Secondly, the applicants argue that the test sequence of Rudolph is averaged at the receiver end, thus is not a pure-zero while the present claimed application is pure zero. Rudolph does teach the claimed limitation of transmitting and receiving the test sequence which is averaged to zero (wherein each test sequence, 20 in Fig.2b are averaged to zero) in order to cancel the noise component (note col.3,

lines 29-32), regardless of having a purer zero or not. Thus, Rudolph teaches all subject matter claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 2-3,5,12,14-15,17 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Rudolph et al. U.S. Pat. No. 6,501,804 B1.

Regarding claims 2 and 14, Rudolph discloses a noise canceling method and apparatus (see Fig.1a and 1b) comprising, means for periodically inserting a zero-point into a signal on a transmission side (see Fig.2a wherein test sequences lying on a zero line of the x-axis are inserted in the signal to be transmitted to the receiver, note col.1, line 61 - col.2, line 5), means for interpolating a noise component from a received signal including a signal in which a time, an amplitude, and a phase are specified (note col.3, lines 4-9 and col.4, lines 9-28) by using the zero-point (test sequence) on a reception side, and means for canceling or subtracting the noise component from the received signal (see 88 in Fig.1b and note col.4, lines 58-62).

Regarding claims 3 and 15, Rudolph teaches all subject matter claimed, as applied to claim 2 or 14. Rudolph further teaches wherein one or more zero-points are inserted at intervals of an integer number of samples. (see Fig.2b wherein the test sequences are inserted at interval of one data block)

Regarding claims 5 and 17, Rudolph teaches all subject matter claimed, as applied to claims 2 or 14. Rudolph further teaches implementation of the noise canceling system in a digital broadcasting environment using AM bands. (note col.1, lines 6-10) And therefore, it is inherent that the system of Rudolph is implemented in a wireless environment having a transparent transmission line transceiving using AM bands.

Regarding claims 12 and 24, Rudolph teaches all subject matter claimed, as applied to claims 2 or 14. Rudolph further teaches wherein an automatic equalizer (note col.3, lines 10-13 eliminating the noise from the received signal) may be provided at a former or latter stage of a noise cancellation, wherein the equalizer is well-known in the art to be used as a function to remove intersymbol interference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4,6,16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rudolph et al. U.S. Pat. No. 6,501,804 B1.

Regarding claims 4 and 16, Rudolph teaches all subject matter claimed, as applied to claims 3 or 15. Rudolph further teaches wherein the test sequences are variable, since data block may be replaced by a gap when greater periodic interval is used, (note col.2, lines 43-65). And although Rudolph does not teach wherein the variable test sequences interval is determined by the signal quality, it would have been obvious to one skilled in the art at the time of the invention to increase and decrease the number of test sequences being transmitted to the receiver depending on the signal quality as the purpose of test sequences are to eliminate noise. Therefore, during heavy noise in the signal received, frequent test sequences may be transmitted. And furthermore, since the transmitter is not aware of the signal quality received by the receiver, the receiver sending the information to the transmitter in regards to the signal quality is well-known in the art. Therefore, it would have been obvious to one skilled in the art at the time of the invention to inform the signal quality received to the transmitter for the purpose of adjusting the frequency of test sequences to be transmitted.

Regarding claims 6 and 18, Rudolph teaches all subject matter claimed, as applied to claims 5 or 17. And although Rudolph does not teach wherein the transparent transmission line comprises a Nyquist transmission line, it would have been obvious to one skilled in the art at the time of the invention to design a system having a Nyquist transmission line for the purpose of supporting a well-known Nyquist theorem.

Allowable Subject Matter

4. Claims 7-11, 19-23 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and overcome the claim objections.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from

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the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam K. Ahn
1/31/05

TEMESCHEN SHEBRETINSAE
PRIMARY EXAMINER
2/2/05